

## Transforming Research Methodologies in EU Life Sciences and Biomedicine

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# State of the Art

## Transforming Research Methodologies in EU Life Sciences and Biomedicine

### Gender-Sensitive Ways of Doing Research

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**ABSTRACT** This article describes how methodologies of EU-funded research within the life sciences and biomedicine have recently become more gender sensitive. This transformation is the result of the Gender Impact Assessments of the EU Fifth Framework Programme, commissioned in 2000–1. The authors assessed the research programme for life sciences, which includes a large health-related component. The new guidelines for research emphasize the need for clear terminology for concepts of sex and gender and for a distinction to be made between the two, for both life sciences and health research. Attention to possible sex differences, even in preclinical research, as well as to effects of gender, will lead to more adequate research data that serve the health of both men and women. The transformation to research becoming more gender-sensitive is further discussed in the context of feminist theory on the body. Being fully aware of the fact that what is happening in bodies is mediated by particular technologies, the authors make an appeal to invest in concepts that take the living and changing body into account.

**KEY WORDS** gender differences ♦ gender-sensitive policies ♦ health-related research ♦ mainstreaming gender (equality) ♦ quality of research ♦ sex differences

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INTRODUCTION

Feminist involvement with life sciences and biomedical research has a long-standing tradition. Beginning with early publications such as *Alice through the Microscope* by the Brighton Women and Science Group (1980), which focuses on science and women's lives, gender studies in life sciences and biomedicine developed into a vast research area by the onset of the 21st century. Handbooks and comprehensive reviews have appeared and many researchers are actively involved in tackling today's problems as regards gender and health.<sup>1</sup> Specialized journals have been launched such as *Women and Health* and *Journal of Women's Health and Gender-Based Medicine*, later abbreviated to *Journal of Women's Health*. In Europe, four international congresses on gender and health were organized by the European Association of Women and Health Research (EAWHR), in Amsterdam (1997), Edinburgh (2000) and Vienna (2002). The fourth congress recently took place in Tallin, 25–27 April 2005.

The early rationale for feminist involvement with biomedical research in the 1970s was, to put it simply, primarily due to the way women were treated by the medical establishment. Patriarchal attitudes, neglectful of women's concerns with the 'male' norm in research and treatment, were convincingly exposed. Even more systematically, the core critique was subsequently summarized in terms of medicalization, psychologization and the trivialization of women's symptoms (Bekker et al., 1999). At the onset, one of the assignments of gender studies was a critique of science. Feminist scholars attacked the epistemological premises of biomedical research: they questioned the positivist framework of discovering unpalatable truths about health and disease. Many of them called for a constructivist approach to biomedicine. This branch of research has yielded a wealth of interesting case studies, for example on the *construction* of the premenstrual syndrome or the menopause, thereby acknowledging the processes of gender. However, these new insights did not seem to have an impact on everyday research practices in the life sciences and biomedicine.

The first change in research practices that took place was not an epistemological one but rather a methodological one. In the USA, a redressing of standard practice occurred in the sense that the exclusion of women as objects of research was corrected. The Office of Research on Women's Health of the US National Institute of Health (NIH) has, thus, been successful in bringing about a fundamental change in a particular research practice, e.g. that of the clinical trial. However, it required the joint effort of academic feminists, congressional leaders, medical doctors at NIH and the women's movement (Schiebinger, 1999) to accomplish this change. New drugs were usually tested on a population of healthy young men between 20 and 40. Once the drug under study was eventually

approved by the Food and Drug Administration (FDA), it then could be prescribed for all, including women, the elderly, children and ethnic minorities. The (white) male norm in research, based on the argument that the menstrual cycle in women would disturb the testing, came under attack.<sup>2</sup> Evidence was put forward that showed that 'traditional' test results could not be extrapolated. The drugs thus developed did not promote women's health because either no effects or different, sometimes harmful effects were reported. As a result of the coordinated efforts described previously, all future clinical research carried out with grants from the NIH has to adhere to guidelines stipulating the inclusion of women and minorities in research (NIH, 1994, 2000). A well-known example of this kind of reform of research practices concerns the diagnosis and treatment of coronary heart disease in women. Differences between men and women now taken into account are condition-specific aspects such as pathogenesis, pattern of symptoms and presentation of symptoms, treatment options and prognosis.<sup>3</sup>

In this article, a feminist intervention in EU-funded research is central. We describe how the gender mainstreaming of research policy resulted in recommendations for a new research methodology. In 2000, the European Commission asked for a Gender Impact Assessment (GIA) of their Fifth Framework Programme for Research and Technological Development (1998–2002) (FP5). Carrying out such a GIA offered a unique opportunity for taking a significant step forward in translating feminist insights into the life sciences and health research. We conducted the GIA of the FP5 research programme for the life sciences known as 'Quality of Life and Management of Living Resources' (QoL). A large part of this programme for life sciences research, which consisted of six key actions and seven generic activities, comprises health-related research. Based on and backed by a wealth of evidence from existing research, we set out to suggest a transformation of the 'traditional' life sciences and health research methodology into a gender-sensitive one. Gender-sensitive in this respect has to be understood as renewed attention to sex differences (without falling into essentialist traps), together with an awareness of possible gender effects. We first give an outline of the policy framework of the GIA studies; namely the policy of gender mainstreaming. Next, the GIA study itself is the focal point of attention. We continue with the implementation of our recommendations for gender-sensitive research in the Framework Programme FP6 (2002–6) by giving examples from current EU research projects and activities. In the final section, we discuss this transformation in the context of feminist theory on the body.

## CONTEXT OF THE GIA STUDY: GENDER MAINSTREAMING EU RESEARCH

An important moment in the worldwide adoption of gender mainstreaming was the United Nations Fourth World Conference on Women, held in Beijing in 1995.<sup>4</sup> A year earlier, the Council of Europe had already come up with a definition, which remains influential: 'Gender mainstreaming is the (re)organisation, improvement, development and evaluation of policy processes so that a gender equality perspective is incorporated in all policies and at all stages by the actors normally involved in policy-making' (Council of Europe, 1998; Stevens and van Lamoën, 2001). In 1996, the European Commission issued the *Communication Incorporating Equal Opportunities for Women and Men into all Community Policies and Activities* (European Commission, 1996). In 1997, this commitment to the gender mainstreaming of all EU policies became a 'fundamental principle' of Community Activity in the Treaty of Amsterdam. Since then, mainstreaming gender equality has become a topic in various community policies and activities as well as in the member states; and interestingly, also in EU science policies.

In 1998, Commissioner Edith Cresson seriously took up this assignment, helped by the wave of indignation that shook the world of science after the publication of the analysis by the Swedish researchers Wold and Wennerås of the selection process of the Swedish Medical Research Council (Wold and Wennerås, 1997). When launching FP5, the European Commission decided to include an equal opportunities dimension by promoting women's participation in European research. In February 1999, it adopted the *Communication Women and Science: Mobilising Women to Enrich European Research*, in which it acknowledged the severe underrepresentation of women in science. Even more important was the fact that the communication defined the policy task to promote gender equality in terms of three dimensions that were put forward as characteristic of the relation between gender and science: science by women, science for women and science about women (European Commission, 1999). Here the active lobbying of Women's International Studies Europe (WISE) may have had an impact.<sup>5</sup> The 1999 Action Plan of the Women and Science Unit within DG Research subsequently formulated two objectives: the organization of a Policy Forum to feed the policy process and to develop collective strategies and the creation of a Gender Watch System to evaluate the EC's goal to promote science by, for and about women (see also European Commission, 2001a).

As part of the Policy Forum, a group of national experts (the so-called ETAN group) was mandated to analyse the current position of female scientists in the European academic world. In 2000, this group published an extensive report, *Science Policies in the European Union, Promoting*

*Excellence through Mainstreaming Gender Equality*, in which multiple aspects of the relation between women, gender and science on the basis of experiences from all member states were highlighted. Although the focus was primarily on the underrepresentation of women in science, the gender dimension of the content of science was certainly not absent. Moreover, gender mainstreaming was identified as a vital precondition for promoting excellence in EU science policy and her member states (European Commission, 2000). Recently, a follow-up report was published by the so-called ENWISE group, which covers the same subject in the new member states (European Commission, 2004). Another point of action taken as part of the Policy Forum was the establishment of the so-called Helsinki Group, consisting of national civil servant representatives from all countries associated with FP5. This group assists the European Commission in collecting statistics and indicators that allow for a comparison at European level and published the report *National Policies on Women and Science in Europe* (European Commission, 2002b). These indicators not only record women's participation at all levels of science, but also the presence of women's and gender studies, or the absence or presence of policies regarding the issue of women and science. Another result of the Policy Forum was the publication of *She Figures 2003*, a collection of statistics on women in science on the basis of an interesting set of indicators (European Commission, 2003).

The Gender Watch System, set up to monitor the impact of gender on the European Commission's Framework Programmes, consists of two pillars. The first involves promoting women's participation in FP5. To this end, in 2000 the Commission set the target of 40 percent participation of women at all levels of EU research policy. The second pillar concerns an evaluation of the gender dimension in the development, management and implementation of the Framework Programmes, beginning with FP5. For this purpose, the EC commissioned a series of GIA studies of all specific programmes within FP5. These studies, which were carried out by seven groups of researchers, investigated the participation of women and analysed whether the research themes, methods and issues prioritized in FP5 affect women and men differently. The conclusions and recommendations of the GIAs were meant to be fed back into the preparation and implementation of the next Framework Programme (FP6).

This is not the place to discuss (or praise) the efficacy of the policy-making process in DG Research that is the result of an interesting coalition between groups that often act separately: (feminist) bureaucrats or equal opportunities officers, gender studies scholars and women scientists. However, we do wish to stress the window of opportunity that was created by the definition of the 'women and science question' as science or research by, for and about women. In our view, the focus on participation of women as well as on the content of research (recently expressed

in the symbolic formula  $GE = GD + WP$ , i.e. Gender Equality = Gender Dimension + Women's Participation) in the Communication and in the assignments for the GIA studies is groundbreaking and potentially disruptive of the existing gender order of science.<sup>6</sup>

#### GIA OF THE RESEARCH PROGRAMME FOR THE LIFE SCIENCES (QOL)

In the call for tender announcing the seven (originally eight) gender impact studies, each covering a part of the Fifth Framework Programme, the aims were not unequivocally defined. The gender dimension of the Work Programme and the actual projects could be taken as objects of analysis, as well as the evaluation process or the issue of women's participation. We therefore decided to create some clarity in our application, by focusing on the three aspects of gender and research mentioned in the Communication: (1) to analyse research *by* women, or women's participation at all levels of the programme and in the EU staff involved in the QoL programme; (2) to analyse research *for* women, or the question whether the Work Programme, the calls and the funded research were addressing women's needs; and (3) to analyse research *about* women, or whether any research was invited (in the Work Programme) or undertaken (in the actual funded projects) that focused on 'women', on the relationship between men and women or on gender and health issues.

The applicants for tender were supposed to start with a state of the art bibliography as a background for the assessment. Also, they were required to develop their own methodology. At first we were rather astonished by the lack of uniformity the Commission had established for the execution of the GIAs. How could the various studies undertaken be compared in the end, given the fact that a *synthesis* report was foreseen? Looking back, however, we appreciate the freedom the Commission allowed the research teams to develop their own research designs. They certainly came up with a diversity of methodologies and approaches from which the Commission can now benefit.

#### RESEARCH BY WOMEN OR WOMEN'S PARTICIPATION (WP)

The participation of women (research by women) at all levels was assessed in quantitative terms. Depending on the kind of commission, panel or projects, the figures were broken down according to member states and/or candidate countries, key action or function (researcher or coordinator for example). We also decided to analyse the participation of women (A-grade) in QoL staff as part of the European science process.

The participation of women in committees and panels that were controlled or easily influenced by the Commission's services came close to the 40 percent rule, set as the main objective. In the different Expert Advisory Groups (for the different key actions within the programme), the average percentage of women participation was 37 percent, ranging from 53 percent (key action 'The "Cell Factory"') to 11 percent (key action 'Sustainable Agriculture, Fisheries and Forestry'). The 'invisible hand' of the Commission became especially visible in the evaluation panels. Here, the average participation of women in one of the calls was 25.7 percent, which is almost 9 percent higher than the 17 percent women in the QoL evaluators' database.

The participation of women dropped, however, when the European Commission had less influence on the appointment procedure or when it did not fall under its control. Thus, among the delegate members to the Programme Committees, women were represented by 24 percent. Nine countries had no female delegate, as opposed to two countries without a male representative. With respect to the participation of women in projects, the prospects were even worse with a mere 18 percent women in the project research teams that passed the selection for the first two calls (first deadlines) of the QoL Programme. The participation of women in QoL staff was also below the EC's target of 40 percent, which, according to one informant, was due to the 'bachelor culture' prevalent in European services. We were not able to assess the representation of gender expertise among the women (and some men) in the various committees, panels and projects, but made a point of explaining that the representation of women per se could not alter the development of research programmes or project evaluation procedures. The actual participation of women is only one aspect of the gender order of science. Therefore, one of the recommendations addressed the need to make the participation of women an integral part of the evaluation procedure; another was to include the participation of gender experts in all the implementation committees and panels.

## RESEARCH FOR AND ABOUT WOMEN OR THE GENDER DIMENSION (GD) OF RESEARCH

Right from the start, we assessed that what was missing in the tender text was the concept of 'sex'. Particularly in the life sciences, both sex and gender are relevant and consequently we established a clear terminology. We defined sex as a biological quality and gender as a sociocultural process, both of equal importance in relation to health-related research. We did so to counter prevailing and confusing notions, which assume that gender is 'a women's issue' (and not an issue that also affects men's



health) and that the concepts of sex and gender can be used interchangeably. The latter, for instance, was suggested by the 'gender box' on the application forms.<sup>7</sup> Although we are fully aware of ongoing debates within feminist theory questioning the distinction between sex and gender, for disciplines like biomedicine and health sciences this conceptual distinction is necessary. Differences between women and men concerning individual health or sensitivity to drugs, or differences in encounters with the health care system, can be attributed to *both* sex differences and differences resulting from gender. The 'integration of the gender dimension', the terminology used by the Commission at the time, in relation to health-related research, should therefore encompass sex differences *and* differences resulting from gender.

## METHODOLOGY

To conduct our analysis of the gender dimension of the QoL Programme and QoL projects, we used the Gender Impact Resource as bibliographic background. This enabled us to analyse the Work Programme. The Gender Impact Resource was compiled from searches in two databases of which one, the IIAV, is specialized in literature addressing gender research, whereas the second one, MEDLINE, is a mainstream biomedical research database (IIAV, 1998). MEDLINE needed 'special treatment' to retrieve what we understood by gender-sensitive research. The bibliographic resource we compiled was rich in illustrating both sex and gender differences and it facilitated the task to convince our partners in DG Research of the relevance of sex and gender aspects in conducting health research (Bird and Rieker, 1999; Fishman et al., 1999; Lorber, 2001; Williams, 2000).

For the analysis of projects (research proposals that have passed the evaluation process and are funded by the EU), we developed a Gender Impact Assessment Protocol (GIA Protocol), inspired by existing instruments for gender-based analysis but tailored to the EU research procedures. The main steps or questions in the Protocol are the following: (1) Is sex and/or gender relevant to the project (relevance check and literature check)? (2) Is sex and/or gender addressed by the project? (3) How are sex and/or gender issues addressed (criteria)?<sup>8</sup>

## RESULTS

The integration of the gender dimension in terms of the attention paid to sex and gender differences in the Work Programme turned out to be fairly limited. A clear articulation of gender aspects in relation to the thematic

priorities of the programme was lacking. In the key action on 'Food, Nutrition and Health', for example, the complex relationship between food, nutrition, masculinity, femininity, identity and power relations was absent. However, the Gender Impact Resource we compiled, contained ample proof, for instance, of the differential access to food within households (Counihan and Kaplan, 1998; Messer, 1997; O'Doherty and Holm, 1999). Although 'gender' was mentioned in the Work Programme text on ageing and disabilities, no specific problems were addressed. However, articles retrieved from literature pointed to the medicalization of old age and to the rise of a so-called 'surveillance medicine' requiring treatment of risk factors. Both these processes affect older women and men differently (Clarke and Olesen, 1999). What was also missing, but cross-cutting various research themes, was the notion of 'doing gender' affecting individual health (Williams, 2000).

Using our GIA Protocol, we evaluated 303 projects of a particular call for proposals (June 1999). Eighty-three projects received an *indication*, that is: sex and/or gender aspects were relevant to the proposed research and should be addressed. It appeared that 80 percent of the projects *with* an indication in fact did not address these aspects. The projects that *did* address sex and/or gender aspects did so only very tentatively. The inadequate manner in which sex differences were addressed and the overlooking of gender aspects – found in various elements of the projects, such as the composition of populations or consulted groups, methods for interviews and surveys, the design of technologies, the level of analysis and the possibly gendered outcome/effects (in particular of policies) – did not come as a big surprise. The Work Programme at the time did not explicitly address the possible relevance of sex and gender aspects, and thus few research projects took due account of these. Nevertheless, carrying out the GIA was a useful exercise. Our analysis provided ample evidence for making clear and targeted recommendations. These were explicitly aimed at improving the integration of the gender dimension in the next Framework Programme (FP6).

## RECOMMENDATIONS

Our general recommendations pertained to conducting gender-sensitive research: how to address sex and/or gender aspects if relevant. Funding should be made dependent on whether sex and gender aspects are adequately addressed in research proposals. Two major recommendations addressed FP6 research areas ('Life Sciences, Genomics and Biotechnology for Health' and 'Food Quality and Safety') in which *genomics* are an important feature. The existence of gene polymorphisms and the individualization of treatment and therapeutic substances it entails, require

taking potential sex differences at the molecular level into account (Editorial, 2001; Greaves, 1999; Greenberger, 2001; Wizemann and Pardue, 2001). Subsequent clinical studies should adhere to guidelines for the inclusion of women in clinical studies. Another set of recommendations was targeted at policy-oriented research and emergent needs. For instance, we pointed to the need to address the unequal access of particular groups of women and ethnic minorities, the disabled and refugees to health care services. We stressed the need to address the role of gender in informal care, which is extremely relevant given the greying population of Europe. Environmental and occupational health and 'diseases without diagnosis' are conditions in which gender aspects are prominently implied (Klinge and Bosch, 2001a).

## DIALOGUE

Our GIA study was carried out in close collaboration between the research team and the scientific staff of the Commission. In the early stages, we became convinced that careful building of a dialogue between the two parties involved, the gender experts and scientists (committed scientific officers and policy-makers), was vital for the acceptance and, by implication, for the future effect of our work. Thus, as gender experts, we adopted an 'educational style' and invested in the development of a clear, acceptable vocabulary for both parties. In this way it was possible to overcome resistance to 'value-loaded' terms like gender bias or gender sensitivity. Another strong feeling we encountered was the idea that gender is not *always* relevant, with the inherent supposition that 'we' would think the opposite. We 'tackled' this by emphasizing the *check* on gender relevance in our GIA Protocol. This left the option open that gender in particular cases might *not* be relevant.

## IMPLEMENTATION OF NEW GUIDELINES FOR EU RESEARCH

The final reports of the seven GIA studies were issued and discussed at the 'Gender and Research' Conference in November 2001 (European Commission, 2001b, 2002a). One year later, in autumn 2002, FP6 texts reflected the success of the GIA enterprise. All references to sex and gender issues in the various FP6 texts have been brought together in the publication *Vademecum: Gender Mainstreaming in the 6th Framework Programme – Reference Guide for Scientific Officers/Project Officers*, issued by DG RTD Women and Science Unit (*Vademecum*, 2003). The implementation of our recommendations can be identified from various

implementation documents such as the *Guide for Proposers* and the *Guide for Evaluators*. The clear articulation of sex and gender differences is conspicuous:

Because of the inconsistent and often confusing use of the terms sex and gender, their use should be clarified: sex refers to differences attributed to biological origins, gender refers to social influences that lead to differences. Males and females differ not only in their basic biology but also in ways they interact with and are treated by society. (*Vademecum*, 2003)

Researchers *have* to pay attention to gender aspects in research whenever appropriate:

Scientific evidence of sex and gender differences in the incidence, prevalence and severity of a broad range of diseases, disorders and conditions has shown that being female or male is an important variable that affects health and illness through the life span. Genomic research in particular holds the potential for uncovering the biological mechanisms of disease that underlie many of those disorders that affect women and men differently.

Finally, attention to sex and gender aspects is made an evaluation criterion:

Gender aspects in the research, concerning participation of women and content of the proposal, will be included as part of the evaluation criteria for selection for funding, by the evaluation panel.

In 2003, researchers writing proposals for research in Thematic Priority 1, 'Life Sciences, Genomics and Biotechnology for Health', were confronted with specific questions in the application form, i.e. the B10.2 section headed 'Gender Aspects in Research'. Some examples of those questions are: 'Does the project involve human subjects?' 'Does the project use human cells/tissues/other specimens?' 'If human subjects are not involved or human materials not used, does the research involve animal subjects or animal tissues/cells/other specimen (as models of human biology/physiology) in such a way that it is expected that it may have implications for humans?' The application form continues with: 'a positive answer to any of these questions implies that sex and/or gender aspects should be taken into consideration in the research proposal'. 'Taken into consideration' means that researchers have to argue how sex and gender aspects in relation to their research topic are taken into account, based on existing literature.

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NEW WAYS OF DOING LIFE SCIENCES AND HEALTH RESEARCH

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In what follows, we give examples of FP6 research projects that have taken the new guidelines for doing life sciences and health research into account. We became acquainted with the projects because, since the launch of FP6, we have become involved in a number of research projects as gender experts, charged with the so-called Gender Action Plans of Consortia.<sup>9</sup>

The first example is an application on depression in 2003, where a particular Consortium (consisting of some 30 universities and institutes working together) responded to the aforementioned B10.2 questions that current knowledge pointed to the following differences (not exhaustive):

- Differences (m/f) in genetic and biological factors (neurotransmitters, hormone levels);
- Differences in prevalence data between men and women (twice as high in women);
- More co-morbidity in women;
- Differences in risk factors: social (gender) role, socioeconomic status, living conditions, style of attribution, coping strategies.

Hypotheses have been put forward on the role of gender in available prevalence data (f:m = 2:1) (Gijsbers van Wijk, 2002). The diagnosis of depression is a descriptive one, based on recording a certain number of symptoms over a certain period of time by the physician. Bearing in mind the differences in the presentation of complaints between men and women, it is not very difficult to see that women, who want to *talk* about their symptoms when seeing their doctor, are more often diagnosed as having a depression than men, who want a *solution* when seeing the doctor. However, this could imply that depression is underdiagnosed in men and that research designs based on current prevalence data could be questioned. The relevant Consortium therefore proposed enrolling equal numbers of women and men in a particular prospective study.

Other examples are two projects in which humans are involved as objects of research, both in the Thematic Priority 'Food Quality and Safety', which take due account of possible *sex* differences as well as differences between men and women as effects of *gender*. *Sex* differences have been documented in their susceptibility to diet-related diseases, their acute and chronic response to nutrients and the distribution of patterns of genetic coding or polymorphisms. *Gender* differences have been detailed for risk perception, risk attitude, motivation with regard to one's own and the family nutrition, the processing of nutrition information, and attendance to different elements of dietary advice, in which

men and women encounter different barriers affecting behavioural change.<sup>10</sup> As a consequence, a particular work package investigating consumer confidence in respect of risk analysis practices stipulates in their quantitative survey that gender aspects will not only be taken into account in the recruitment stage, but also in the research questions and in the analysis of results. The research protocol will explicitly state a hypothesis on gender issues.

The feasibility of the very new guidelines for *preclinical* research concerning sex disaggregated data of animal experiments and notification of the origin of cells and tissues is now being tested in the various funded projects. The results of which will become available within the next two to three years.

#### FEMINIST RESEARCH METHODOLOGIES IN LIFE SCIENCES AND HEALTH RESEARCH: THEIR TRANSFORMATIVE POTENTIAL

The formulation of recommendations for change of EU research practices towards application of gender-sensitive methodologies made us rethink strategies and strands in feminist theory. It is obvious that over the years a distance has grown between women/gender and health researchers and feminist theoreticians, labels used for explaining different directions of research interest. This distance concerns issues of (the materiality of) the body. Kuhlmann and Babitsch (2002) comprehensively addressed this dissociation by discussing body concepts in recent feminist theories as well as in women's health research in their article 'Bodies, Health, Gender: Bridging Feminist Theories and Women's Health'. They give a review of statements on the body by feminist theoreticians like Butler, Haraway and Grosz (among others) and compare those statements with work by gender and health researchers like Doyal, Arber and West (and others). Kuhlmann and Babitsch conclude that the selected feminist theoreticians do make statements on the body, but that no connection can be made between their statements and health problems or health issues because of their focus on the deconstruction of the body as 'natural'. (Gender) scholars of various kinds (philosophers, science and technology scholars, social scientists) are the consumers of these intriguing articles, books and stories, but the 'traditional' health research community seems to neglect them. Aspects highlighted in articles by gender and health researchers are the relationship between socioeconomic circumstances and health and phenomena like 'doing gender is doing health'. Kuhlmann and Babitsch draw attention to the fact that women/gender and health researchers largely research issues *outside* the body, like the impact of socioeconomic circumstances on health, and point out that serious attention to what is

happening *in* the body is lacking. They go on to conclude that somehow empirical research practices on the body/bodily processes are *not* addressed by the two groups of researchers. The authors further contend that gender and health researchers have tried to relate to theoretical debates but that the opposite, theoreticians trying to relate to gender and health issues, is lacking.<sup>11</sup> The strong recommendation of Kuhlmann and Babitsch is to 'bring the material body back into feminist theory and to further concepts that take the living and changing body into account' (Kuhlmann and Babitsch, 2002: 433).

Reflecting on the work of Kuhlmann and Babitsch, it is clear that they are addressing a long-standing debate between theory and practice and their respective societal relevance. It is not our purpose here to go into this. A second debate concerns the sex/gender question. Both groups of scholars in fact primarily address *gender*: the feminist theoreticians because they aim at deconstructing sex as well as the sex/gender opposition or division, and the gender and health researchers because they focus on (social) issues outside the body. We position ourselves somewhere in-between as feminist gender studies scholars with an active interest in studying science as a process and in changing actual research practices, especially in the life sciences and health research. The focus in our GIA was on the practice of life sciences and health research in terms of (methodological) content (gender dimension) and context (women's participation) of research. As we did this in close dialogue with the scientific officers in Brussels, most of whom are specialized in the field, it immediately became clear that addressing the practice of life sciences and health research cannot be done without giving due consideration to processes taking place in (material) bodies. This meant that we realized from the start that we had to pay due attention to possible *sex differences* (which was taken for granted by the Brussels specialists) besides the role of gender (which was taken for granted by us). To do so took some courage on our part and hours of debate, because, as we have seen, paying attention to possible sex differences has not been 'fashionable' for a long time in feminist research for fear of the essentializing practices of 'traditional scientists' who have been so eager to define biological sex differences. Yet we invested in raising the necessary focus on sex differences and on the effects of gender in research on health and health care, and soon discovered that we were not alone in this undertaking. Influential research agendas such as the ones of the Office of Women's Health Research at the National Institutes of Health Research in the USA and of the Canadian Institutes of Health Research have also stressed the importance of sex and gender and emphasized the need for research questions related to both sex and gender in the analysis and study of health and health problems. Agreeing with these agendas, we stressed the usefulness of both terms and the conceptual distinction between the two for life sciences and health research.

Acknowledging the interaction between sex and gender, already pointed to for a long time by feminist biologists like Lynda Birke and Anne Fausto Sterling in their work, opens up possibilities for paying attention to sex differences, effects of gender, as well as to the interaction between the two. Or, put in other words: women and men are differentially vulnerable to specific illnesses both through genetic causes (for example, diseases linked to the sex chromosomes, frequency of mutations, differing distributions in patterns of genetic coding or polymorphisms), environmental exposures (for example, dangers in the workplace, bacterial exposure, nutrition, violence, poverty, lifestyle) and combinations of the two, as for example, epigenetic regulation (silent genes switched on by the environment) (APA, 1996; NIH, 1999; Greaves, 1999). Interesting research questions have also been raised by Elisabeth Wilson. She wonders whether feminist stories on the anorectic body have taken note of the biological function of the stomach, mouth and digestive system. She asks: how many analyses of the 'anxious body' take neurological data into account?

We now fully support the idea that a non-essentialist interest into what is happening in bodies cannot be excluded from feminist research into the body and health. We are of course aware that what is happening in bodies is mediated by particular (gendered) technologies, but that does not preclude due attention to the recorded phenomena, just because of insight gained into these mediation processes. Consortia now applying for EU funding in FP6 Thematic Priorities 'Life Sciences, Genomics and Biotechnology for Health' or 'Food Quality and Safety' have to address specific questions on sex and gender in the application form (the B10 section). The new guidelines for gender-sensitive EU research are even more important for the following reason. As much biomedical research goes together with a genomics component and thus will result in more attention to biological factors as background, explanation and treatment of diseases, it is important to educate *young* researchers on how effects of *gender* can also be involved in almost all health topics and should be taken into account. The various training programmes of current research projects provide excellent opportunities for this.

#### GENDER MAINSTREAMING OF EUROPEAN RESEARCH: A GOOD PRACTICE

The implementation of the recommendations of the GIA studies in FP6 is remarkable. We believe that we have created clarity by separating sex and gender effects and that this clarity has contributed to convincing our partners in DG Research of the relevance of sex and gender issues. As a result, the relevant documents now contain the necessary boxes,



explanations and examples. Moreover, the fact that issues of women's participation (WP) and of gender aspects of the research content (GD) will be taken into account in several steps of the evaluation process (managerial quality of research team, content of proposal) shows that in FP6 the gender dimension is integrated as a criterion of *quality*. This reflects a true characteristic of gender mainstreaming, i.e. not to develop measures for a particular target group of women but to enhance the quality of a general policy.

## NOTES

1. We will not give full bibliographic details here. We refer to the comprehensive overview given by Londa Schiebinger (1999) in her book *Has Feminism Changed Science?* And to the research agendas like the NIH *Agenda for Research on Women's Health for the 21st Century* (NIH, 1999) and the Canadian one: *Sex, Gender and Women's Health* (Greaves, 1999), which list all relevant publications.
2. The other reason for excluding women from clinical trials is because of a 100 percent protection of the unborn child.
3. In 1995, the Dutch Heart Foundation made women and heart disease a priority theme. All kinds of educational activities were launched, among which was a video, produced by Het Werktheater, for physicians to illustrate differences between men and women in presentation of complaints of heart disease.
4. The original expression mainstreaming gender equality is sometimes abbreviated to mainstreaming gender or gender mainstreaming.
5. At the 1998 Women and Science conference, WISE adopted a motion that stressed the attention to matters of research content parallel to women's participation.
6. The formula appeared for the first time in *Vademecum* (2003).
7. In this respect, an interesting intervention was made by Judith Lorber in reaction to an example of a severe misunderstanding of the concepts sex and gender between authors of a particular article in the *British Medical Journal* and the authors of the Editorial highlighting that article (Lorber, 2001). She provided a clear explanation of the difference between the two, in the same terms as we do.
8. See GIA Protocol in Klinge and Bosch (2001b).
9. Recently the Commission has published a 'Best Practice Compendium' of current Gender Action Plans of Consortia in several Thematic Priorities, including 1 and 5 (October 2004).
10. These examples are taken from being involved as gender experts in several large international projects (SAFEFOODS, NUGO, EUROPREVAL). Gender experts in these projects are responsible for the implementation of so-called Gender Action Plans (GAPs), which are monitored by the Commission.
11. This article contains a much more detailed analysis than can be given here, and we do not mean to reduce the argument of the authors to the selected quotes.

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